Appl. No. 10/070,080 Amdt. dated 2/2/2004

Reply to the Office Action of 10/31/2003

IN THE CLAIMS:

Please amend Claims 28, 30, 41, and 45.

Claims 20-27 (Canceled)

28. (currently amended) A semiconductor die package, comprising:

a semiconductor die having one or more bond pads on a top surface for providing

terminals to one or more sensors, in particular optical sensors, within the top surface;

a die carrier which does not extend in front of said sensors and which has one or more

bond pads comprising bond terminals and having external lead bonds, the bond pads of said die

carrier and the bond pads of said die determining between them an annular interface area and

being coupled in this area;

a sealing ring encapsulating said annular interface area; and

a packaging material encapsulating the bottom surface of the die carrier and a bottom

surface of the semiconductor die.

29. (previously presented) The semiconductor die package according to claim 28, wherein

the die carrier has a pre-printed frame and each external terminal comprises a wire lead.

Appl. No. 10/070,080 Amdt. dated 2/2/2004

Reply to the Office Action of 10/31/2003

30. (currently amended) The semiconductor die package according to claim 29, further

comprising:

a cap having a second opening similar in size to the a first opening in the die carrier, the

cap being attached to the top surface of the pre-printed wire frame and the packaging material

substantially encapsulating said cap.

31. (previously presented) The semiconductor die package according to claim 30, wherein

the cap is attached to the pre-printed frame by a polymide adhesive.

32. (previously presented) The semiconductor die package according to claim 28, wherein

the die carrier has a first opening larger than the one or more sensors but smaller than the

semiconductor die and has one or more external terminals, the top surface of the semiconductor

die being attached to the bottom surface of the die carrier such that the one or more sensors are

disposed below the first opening and an interface area is formed where the top surface of the

semiconductor die extends beyond the first opening in the die carrier and each bond pad is

coupled to a portion of one of the external terminals that is exposed on the bottom surface of the

die carrier, and the semiconductor die package further comprising:

a sealing ring encapsulating the interface area; and

a packaging material encapsulating the bottom surface of the die carrier and a bottom

surface of the semiconductor die.

- Page 3 of 10 -

Appl. No. 10/070,080

Amdt. dated 2/2/2004

Reply to the Office Action of 10/31/2003

33. (previously presented) The semiconductor die package according to claim 32, wherein

the sealing ring comprises a first external sealing ring and a second internal sealing ring.

34. (previously presented) The semiconductor die package according to claim 32, wherein

said sealing ring and/or said packaging material comprise a thixotropic epoxy-based material.

35. (previously presented) The semiconductor die package according to claim 32, wherein

each bond pad is coupled to one of the external pads on the bottom surface of the die carrier by a

solder bump.

36. (previously presented) The semiconductor die package according to claim 32, wherein

the die carrier comprises a substrate and each external terminal comprises a bond pad formed on

a top surface of the substrate.

37. (previously presented) The semiconductor die package according to claim 32, wherein

the one or more sensors are covered with a protective layer.

- Page 4 of 10 -

Appl. No. 10/070,080 Amdt. dated 2/2/2004

Reply to the Office Action of 10/31/2003

38. (previously presented) The semiconductor die package according to claim 32, further

comprising:

a transparent encapsulation material in the first opening and on the top surface of the

semiconductor die.

39. (previously presented) The semiconductor die package according to claim 32, further

comprising:

a lens disposed above the one or more sensors.

40. (previously presented) The semiconductor die package according to claim 28, further

comprising:

a pre-printed frame having a recessed area which is larger than the semiconductor die and

having one or more wire leads, a bottom surface of the semiconductor die being attached to a top

surface of the recessed area of the pre-printed frame;

a wire bond coupling each bond pad to a portion of one of the external terminals near the

recessed area;

a dam surrounding the recessed area to prevent packaging material from entering the

recessed area:

a sealing material encapsulating each wire bond; and

a package material encapsulating the bottom surface of the pre-printed frame.

- Page 5 of 10 -

Appl. No. 10/070,080

Amdt. dated 2/2/2004

Reply to the Office Action of 10/31/2003

41. (currently amended) The semiconductor die package according to claim 40, further

comprising:

a cap having a second opening similar in size to the a first opening in the die carrier, the

cap being attached to the top surface of the pre-printed wire frame and the packaging material

substantially encapsulating said cap.

42. (previously presented) The semiconductor die package according to claim 42, wherein

the cap is attached to the pre-printed frame by a polymide adhesive.

43. (previously presentedl) The semiconductor die package according to claim 40, wherein

said sealing ring and/or said packaging material comprise a thixotropic epoxy-based material.

44. (previously presented) The semiconductor die package according to claim 40, wherein

the one or more sensors are covered with a protective layer.

45. (currently amended) The semiconductor die package according to claim 40, further

comprising:

a transparent encapsulation material in the a first opening in the die carrier and on the top

surface of the semiconductor die.

- Page 6 of 10 -

Appl. No. 10/070,080 Amdt. dated 2/2/2004 Reply to the Office Action of 10/31/2003

46. (previously presented) The semiconductor die package according to claim 40, further comprising:

a lens disposed above the one or more sensors.